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cc:
Subject: Xcel Energy's Comments on UOS Field Sampling Plan, Fort Collins Aztlan Center

Attached are Xcel Energy's comments (with transmittal letter) on the UOS Phase I Environmental Site Assessment and Field Sampling Plan, as were discussed during our conference call yesterday. Please contact me should you have any questions or comments before our next conference call on the 6th.

<<FSP Comments Transmittal.pdf>> <<Xcel Energy FSP Comments.pdf>>

Margit / Karen - Please forward these to Mark Walker, as I do not have his e-mail address. Thanks!

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720-497-2107, 720-497-2117 (Fax), 303-556-0679 (Pgr)


FSP Comments Transmittal.| Xcel Energy FSP Comments.|

Energy Supply
Environmental Services Department
4653 Table Mountain Drive
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May 2, 2003

Ms. Margit Hentschel
Natural Resources
City of Fort Collins
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XCEL ENERGY COMMENTS ON UOS PHASE I ENVIRONMENTAL SITE ASSESSMENT AND FIELD SAMPLING PLAN FOR FORT COLLINS AZTLAN CENTER

Xcel Energy has reviewed the UOS *Phase I Environmental Site Assessment and Field Sampling Plan* ("Plan") prepared for the City of Fort Collins Aztlan Center. As we discussed during the May 1st conference call, we have numerous comments on this Plan, which are attached here for your review. As we also discussed, these comments are based upon the Plan as received on April 17, 2003. Subsequent changes to the Plan, such as those described by the April 24th e-mail from Bev Halwa (URS) may result in some comments no longer being applicable, but are included here for completeness.

While numerous comments are provided, our chief concern is that the existing Plan is significantly flawed and hence, likely to be inadequate in meeting the stated objectives. We therefore would like to reiterate our offer to take a lead position in developing and conducting the sheen area investigation (but not the adjoining landfill investigation). We believe that a focused investigation directed solely at determining the presence, source(s), extent, and transport mechanisms of the sheen area constituents will best satisfy the mutual objectives of all stakeholders.

We would be happy to discuss our comments, as well as our offer and associated arrangements, with you further at your convenience. You can reach me at 720-497-2107 (office) or 303-556-0679 (pager), or Frank Prager at 720-497-2038.

Sincerely,

Terry D. Staley
Manager, Environmental Services
Xcel Energy

cc: Karen Reed (USEPA)
Bev Halwa (URS)
Mark Walker (CDPHE)
Hal Stuber (Walsh)
Dave Rau (Paragon)

Xcel Energy Comments on the
Phase I Environmental Site Assessment and Field Sampling Plan
Ft. Collins Aztlan Center
URS Operating Services, Inc., START 2, EPA Region VIII
Revision 0, 3/2003

This document begins with a set of general comments, presented in four key areas of focus. The general comments are followed by detailed comments that reference specific sections of the original URS document.

GENERAL COMMENTS

I. Predetermination of Investigation Results

1. The document should not predetermine the conclusions and should focus on the objectives. The foundation of the FSP is biased toward meeting landfill closure by proving sources of impact are from off site as opposed to potential landfill sources. In defining data quality objectives, the goal of "documenting that the source of a product collected from the riverbed is not the landfill" fundamentally biases the design of the FSP and any conclusions reached from the implementation.

2. The FSP will not meet objectives without predisposed interpretation. For example, throughout the document it is presumed that the source of material observed in the river is the former Poudre Valley Gas Company, and presumed that a "paleochannel" exists providing a transport mechanism. The presumptions predispose interpretation of data collected as part of the FSP.

3. No comprehensive geologic data has been presented to support a presumed "paleochannel"; neither has a bedrock profile been established which would support this presumption. Hence, all reference to a "paleochannel" should be removed from the document to eliminate bias. Note that the report, *Environmental and Engineering Geology of the Windsor Study Area, Larimer and Weld Counties, Colorado,* by Colorado Geological Survey Department of Natural Resources, 1987, does not indicate any paleochannels in bedrock surface perpendicular to the general southeast flow direction of the Poudre River.

4. The fundamental assumptions (i.e., a bedrock paleochannel, contaminant plume continuity, etc.) are not presented with adequate supporting data, nor supported by all existing site data. For instance, the data from BTH 14 and BTH 15 (November 2002, Walsh) specifically do not support a connection between a groundwater or DNAPL plume allegedly associated with the former Gas Plant and the material observed in the Poudre River. This indicates that the conceptual model is incomplete, and that the site

complexity is such that multiple contaminants from multiple sources are a possibility.

II. Sampling Plan Deficiencies

5. The sample locations are inadequate to comprehensively evaluate potential sources or pathways of impacts to the river. For example, the work plan does not sufficiently address the possibility of a localized source for the material in the river.

6. Additionally, even though investigation of the "seep" is a primary objective of this study, no sediment or surface water samples are obtained, as written.

7. Geoprobe techniques are subject to poor recovery, low sample volume, and smearing subsurface materials, and as such are an inadequate method for a landfill site and the stated purpose of the FSP.

8. Continuous sample core recovery during drilling is recommended to adequately characterize subsurface conditions.

9. Soil sample collection should not be based on an arbitrary fixed depth, or solely upon visual or olfactory indications. The basis for identifying sample locations should be consistent between borings, and should reflect discrete zones of interest for the landfill investigation, (such as near surface (0-12"), landfill material, groundwater table and bedrock/alluvium), which may vary in depth from boring to boring.

10. It should be recognized in the sample planning process that confirmation of no contamination can be as important to developing a correct site model (and subsequent corrective measures) as the confirmation of contamination.

11. The presence or absence of constituents (e.g., PAHs) alone is not sufficient to determine source(s) or define transport mechanisms. Experience at numerous MGP sites demonstrates that dissolved phase constituents in groundwater typically precede free phase NAPL migration.

III. Analytical Deficiencies

12. Analytical methods for differentiating between various likely PAH sources (coal tars, water gas tars, roofing tars, wood treating creosotes, and/or petroleum products (i.e., gasoline and diesel)) are not thoroughly developed or included.

13. Throughout this FSP, specific constituents (i.e., VOC, PAH, metals, etc.) should be referenced, as opposed to the use assumptions of contaminant sources (i.e., coal tar, creosote, etc.). Also, throughout the FSP references to offsite contaminant sources are presented without documentation.

14. On data presented in FSP tables, EPA method numbers are not provided.

IV. Inclusion of Cleanup Standards

15. The inclusion of cleanup standards is not appropriate for an FSP, as the nature, extent, and potential risks of impacts has not yet been defined.

SPECIFIC COMMENTS

The following specific comments are included with reference to the FSP text in italics.

Part I, Phase I – Environmental Assessment

1.0 Introduction

1.1 Purpose

Is the EPA Technical Direction Document (TDD) 0212-0008 dated 12/5/02 available for our review?

1.2 Scope of Services

(Paragraph 1)
"*The product may also ...*" The document does not consider all possible sources (i.e., UST releases, solvent releases, and others) .

2.0 Site Description

(Paragraph 3):
What is the soil directly above the bedrock in this specific area? This would be more useful information than regional soil information.

3.0 Historic, Current, and Planned Land Use

(Paragraph 3):
"Part of this effort will include documenting ..." This should be changed to "investigating source and migration pathway of NAPL".
"...not originating from the landfill as well as documenting ..." This should be reworded as "to determine if the landfill poses a threat to the environment".

5.0 Site Reconnaissance

(Line 3):
"...observed seep ..." Why is this defined as a seep? The term "seep" makes the assumption of a process, not a description of the observation. The acronym NAPL provides an accurate description of the material observed.

6.0 Findings

(Paragraph 1):
"One tar pit of unknown size was located north of the smaller, western gas holder." Where is the documentation for this statement? If no documentation, this should be deleted.

(Paragraph 3):
"Soils containing coal tar and creosote, ..." What is the documentation to conclude the presence of coal tar and creosote (field observations, analytical, etc.)?

(Paragraph 8):
Exposed debris on bank of river from landfill should be noted. Please add the date of cessation of landfill operations.

(Paragraph 9):
"Perimeter locations near residential, commercial, and industrial areas do not appear to be accumulating methane gas (Walsh, 2001B)". Were these areas tested, or how was this conclusion reached?

(Paragraph 10):
"Samples were analyzed for metals, some organic compounds, and phenols (the most mobile compounds associated with coal tar)". Phenols are not the most mobile compound associated with coal tar.

(Paragraph 11):
"Schrader Oil located on the property ..." Please provide a plume map from the UST investigations, map the concentrations of constituents, and demonstrate separation of plumes if that in fact exists. Why not include more detail on the sample results from UST release investigations?

(Paragraph 12):
"During the Phase I Investigation ..." What about other sources that are potentially affecting the property, i.e., BTEX, MTBE, PCE, etc.?

(Paragraph 13):
"A groundwater plume ..." Why is the plume defined solely as coal tar compound plume? The groundwater plume appears to contain PAHs, VOCs, and other impacts. Data from BTH-15 adjacent to the river, and the river NAPL sample should be included. No impacts were noted in monitoring this well. The plume described within this report and others does not extend to the river.

(Paragraph 14):
"...extension of the known plume of coal tar ..." This is not a fact. Other sources are potentially part of this plume.

"Notations in boring logs as well as subsurface soil sample results support the possibility that the product may be flowing from the previous location of a gas holder along a channel in the sandstone bedrock (paleochannel) into the Cache La Poudre River (UOS, 2003B)." This text apparently makes a conclusion without proper evidence. The text should be removed.

Comments related to preliminary analytical results for sample FC-PR-01:

- What are the EPA method numbers?
- TCE is not a constituent that originates in coal tar.
- All results from the URS February 3-5, 2003 should be included (i.e., water samples and other sediment samples).

7.0 Conclusions

(Bullet 3):
Revise to state that data are insufficient regarding the potential impacts of the old city landfill "*as well as all other sources of potential impact*" on the environment.

(Bullet 4):
"*The product collected from the Cache La Poudre River bed adjacent to the site has characteristics similar to manufactured gas plant products, but the source of this product has not yet been documented with analytical data.*" ... This should be reworded to state: "The source of the product collected from the Cache La Poudre River has not been documented with analytical data."

Part II, Field Sampling Plan

General comment regarding this section: The work plan uses terms such as *potentially* and *possibly*. An adequate work plan needs to precisely define the scope of work to be performed based on available information.

1.0 Introduction

(Paragraph 1):
"*Groundwater samples will be analyzed for ...*" and "*DNAPL samples will be analyzed for...*" Inclusion of analyses for VOCs such as chlorinated solvents, TPH, MTBE, organic lead, etc., would help evaluate other potential sources.

"*Extractable petroleum hydrocarbons ...*"
Will this differentiate between petroleum products? Please add EPA method numbers.

2.0 Objectives

(Bullet 2):
"*Determine if the source of product collected from the Cache La Poudre River bed immediately adjacent to the landfill is either the landfill or south of the site.*" Delete either "*the landfill*" or "*south of the site.*" The purpose should be to definitively determine sources and pathways into the river without bias.

(Paragraph 1):
"Data generated..." Will these data be used for a risk assessment and remedial action evaluation? If so, data collection is not adequate.

3.0 Data Quality

3.1 Data Quality Objectives

Step 1: Stating the Problem
"In order to apply for closure through the CDPHE Voluntary Cleanup Program the City must collect analytical that documents the landfill poses no threat to human health and the environment. This includes documenting that the source of a product collected from the riverbed is not from the landfill."
- First, this problem statement predisposes a conclusion, and should be rewritten to remove bias.
- Second, focusing solely on "documenting" that the river product is not from the landfill does not satisfy the stated FSP objective of "Determine the source of the sheen and the product observed in the Cache la Poudre River" – it would only discount one potential source.
- Finally, the statement is overly prescriptive. We suggest instead, using applicable risk assessment techniques, that landfill closure may be obtained based on reasonable and manageable risks to human health and the environment – not "no threat" as currently written.

Step 2: Identify the Decision
"...as a result of passing through the landfill." The FSP is inadequate to evaluate this possibility and support closure. For example, impacts could be from the landfill itself and/or from other discrete sources.

Step 5: Develop a Decision Rule
(Paragraph 1):
"...the next appropriate steps will be determined by the Brownfields Committee."
Please define the makeup of the Brownfields Committee. Does it include relevant stakeholders?

(Paragraph 2):
No comprehensive geologic data has been presented to support this presumption. Constituents of sample from river could have been derived from other sources. How are sources to be differentiated from one another? Why not look at other theories for the presence of impacts in the river? Well BTH-15 shows no impacts related to gas plant. Therefore a plume may not extend to river. Impacts in river or other wells could be attributed to a variety of sources. The presence of constituents alone is not enough to verify a definitive source and define transport mechanisms.

Step 6: Specify Limits on Decision Errors
There is insufficient information to narrow down to these two null hypotheses. The source of NAPL in the river has not been determined. Secondly, per an e-mail from URS on April 24, 2003, removing the grid drilling from the FSP is insufficient to confirm the second null hypothesis.

Step 7: Optimizing the Design
(Paragraph 1):
"Project budget is an important consideration in this sampling design." Ensuring accuracy of conclusions from investigation data should be the most important consideration.

(Paragraph 3):
"*Subsurface soil samples ...*" The proposed 150-foot spacing is insufficient to accurately determine bedrock contours. Presence of a paleochannel is speculative and should be removed.

"*Field screening will be used to document the continuity of the presence of PAHs.*" What is meant by "the continuity of PAHs"? How are PAH's going to be field screened? How will the sources of PAHs be determined?

"*Documenting the source ...*" The term "documenting" implies that it has already been shown to be the source. This should be reworded as "evaluate and determine possible sources".

4.1 Concept of Operations

4.1.1 Schedule

"*A maximum of 3 days ...*" This timeframe may be insufficient to meet the objectives. Does this imply sampling in the river bed or is this looking at the "paleochannel theory"?

4.2 Field Activities and Sample Locations

(Paragraph 1):
Will the existing monitoring wells be sampled as a part of this investigation? If not, why not?

(Paragraph 2):

"*Existing wells will be surveyed using a total station ...*" Why not use mean sea level elevations?

"*Geoprobe ...*" Use of a geoprobe in a landfill is not usually an appropriate sample collection method. Landfill debris and gravel cobbles can reasonably be expected to plug the sampling apparatus. Moreover, collection of groundwater samples via geoprobe technology is a screening level technique and cannot be directly compared to groundwater samples collected via properly constructed monitoring wells. The geoprobe is an effective method in homogeneous, fine-grain materials. It can be less effective where there is gravel and/or debris, both of which occur at this site. It can be difficult to obtain an adequate volume of soil for analysis.

BTH-15 provides more adequate information for groundwater monitoring than geoprobe techniques from the same area.

(Paragraph 4):
"*As many as ...*" Other pathways should be evaluated. For example, if stained soils are found at the water table soil interface, will samples be collected? (see general comment No. 9) It is noted on several borings that this seems to be the case.

(Paragraph 5)
"*Pertinent information is available ...*" Please provide a summary and use this summary to define the FSP objectives. Some of these boring logs do not show any visual contamination.

(Paragraph 7):
"*All sample points will be located ...*" Sample points should be shot by a registered professional surveyor and added to the project survey database.

4.3 Sampling Methods

4.3.1 Geoprobe Surface and Subsurface Soil Samples

(Paragraph 1):
Geoprobe methods are inadequate. See previous comments.

The prescribed sampling plan is unclear and inconsistent with the stated objectives. Samples should be collected for the specified analyte list from discrete and consistently defined zones of interest, such as near surface (0-12"), landfill material, groundwater table and bedrock/alluvium interface (see general comment No. 9).

"*Clear 3-foot acetate liners ...*" What is the diameter of this specific geoprobe sampler?

"*VOC samples will be collected only ...*" Why no VOC samples in the absence of PID results? Verifying the absence of contamination is just as important as documenting known contamination.

(Paragraph 2):
"*Information from previous investigations and professional judgment ...*" This is inadequate. Locations and scope should be defined in the FSP. Evidence for the presence of a paleochannel has not been sufficiently defined and mapped.

(Paragraph 3):
"*The initial transect will be adjacent ...*" What if no DNAPL is found in the transect closest to the river? Won't this potentially show that NAPL impacts in the river are not being transported on the bedrock surface from the former Poudre Valley MGP site? What if there is not any recovery in the zone along the bedrock? Add criteria for defining the presence of NAPL. Visual staining and olfactory observation is insufficient.

(Paragraph 4):
"*Continuous core samples may be collected ...*" Continuous soil core recovery should be collected in all boring locations.

"*This information may be used to map the bedrock topography along the migration pathway.*" It appears that the bedrock topography has not been sufficiently mapped; therefore, this information should be collected and used for this purpose. In addition, site-wide elevation control should be completed by a registered professional surveyor in order to generate these data.

(Paragraph 5):
"*A sample will be collected from a portion of the ...*" Samples should be collected from soil cores at the base of the bedrock regardless of the presence of NAPL or impacted material. This is important in order to evaluate and characterize potential sources.

"*Otherwise, another location will be selected.*" It is unclear what this is referring to.

"*A fluorescent light and dark box will be used for field screening.*" This method of field screening can show the presence of certain PAHs (i.e., naphthalene) but is not a field screening technique for MGP materials exclusively, other sources can still be possible.

"*Professional judgment will be used in the field to determine alternatives if the attempts to collect DNAPL samples from the paleochannel are unsuccessful.*" First, a "paleochannel" has not been defined or evidenced. Second, if DNAPL is not present on the top of the bedrock as in BTH-15, it is evidence that a paleochannel does not exist. Third, what are the alternatives where DNAPL is not present?

4.3.2 Geoprobe Groundwater Samples

Groundwater samples collected by geoprobe techniques is a screening level methodology. Data should not be compared to groundwater data collected from properly constructed monitoring wells. In addition, please describe geoprobe installed groundwater monitoring points as temporary rather than as wells.

4.4 Groundwater Flow Measurement

These wells should be surveyed to the mean sea level using a registered *professional surveyor.*

4.6 Analytical Parameters

(Paragraph 1):
Provide EPA method numbers.

(Paragraph 2):
"Analytical results from subsurface soil samples ..." Remove reference to "paleochannel". Reword this sentence to state, "Constituents detected during investigation will be compared to all potential sources."

Table 1 Sample Locations and Rationale

Note *field locations* are not adequate. Specify location on a map in the work plan.

Note for sample numbers FC-SS-B1 through FC-SS-B7: Sample spacing and locations are inadequate to develop a site-wide bedrock contour map.

Table 2 Non-Sampling Data Collection Rationale

Specify survey accuracy. Specify professional surveyor.

Paleochannel Locations: Reference to a paleochannel is speculative and should be removed. In addition, the strategy stated: *"Collect subsurface soil borings from above bedrock to locate the suspected paleochannel."* It is not feasible to define bedrock surface elevation by sampling material above the bedrock surface.

Soil Gas: Specify frequency of data collection.

Table 3 Sample Plan Checklist

Provide EPA analytical method numbers.

Table 4 Sample Container Types, Volumes, and Sample Preservation

Recommend use of EPA SW-846 analytical methodology rather than CLP.

Tables 6, 7, 8 Risk Screening Levels and Cleanup Standards

It is inappropriate to include risk screening levels and cleanup standards when the type, nature, extent, sources, and exposure pathways of potential impacts has not been defined. These tables and any text references to these tables should be removed from the FSP.